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EXAMINER	
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ART UNIT	**PAPER NUMBER**
2167	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/813,590	TONG ET AL.	
	Examiner	Art Unit	
	Kuen S. Lu	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 December 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1.1. The Action is responsive to Applicant's Amendment filed December 21, 2006. It is acknowledged amendment made to claims 1, 11, 13, 21-22, 24, 26-27 and 30-31.

Although claims 11, 27 and 30 were amended by removing phrase "do not substantially affect", however, the newly amended claims remain rejected under 35 U.S.C. §112, second paragraph, among other claims.

Applicant's argument made in the Amendment in regarding to the 35 U.S.C. § 101 rejection to claims 11-20 is persuasive and amendment made to claim 30 has overcome previous rejection, and the rejection to claims 11-20 and 30 is hereby withdrawn.

As to claims 21-29, the claims are or remain rejected under 35 U.S.C. §101 as described in this Action for non-final rejection.

1.2. Please note claims 1-31 in the application are pending.

Specification

2. The disclosure is objected to because of the following informalities:

The specification contains a plurality of typographical errors.

Listed below are some examples of errors:

2.1. Page 3, [0008], "identifues";

2.2. Page 12, [0042], "fo";

2.3. Page 13, [0045], "categores";

2.4. Page 14, [0045], "multipling"; and

2.5. Page 16, [0052], "examplary".

Appropriate correction is required.

Response to Arguments

3. Applicant's arguments with respect to claims 1-31 have been fully considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4.1. Claims 1, 11, 13, 21-22, 24, 26-27 and 30-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In the present instance, the highlighted terms (or phrase) "**material** to" in claim 1; "**substantially similar** to" in claims 13, 21-22, 24 and 26; and "**meaningfully** contribute to" in claims 11, 27 and 30-31 render respective claim(s) indefinite. The terms "**material** ", "**substantially similar**" and "**meaningfully**" are not defined by the claim, the specification does not provide **a standard for ascertaining the requisite degree**, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. § 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5.1. As set forth in MPEP 2106 (II) (A):

The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373, 47 USPQ2d at 1601-02. The purpose of this requirement is to limit patent protection to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents nothing more than an idea or concept, or is simply a starting point for future investigation or research (Brenner v. Manson, 383 U.S. 519, 528-36, 148 USPQ 689, 693-96); In re Ziegler, 992, F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993)). Accordingly, a complete disclosure should contain some indication of the practical application for the claimed invention, i.e., why the applicant believes the claimed invention is useful.

Apart from the utility requirement of 35 U.S.C. 101, usefulness under the patent eligibility standard requires significant functionality to be present to satisfy the useful result aspect of the practical application requirement. See Arrhythmia, 958 F.2d at 1057, 22 USPQ2d at 1036. Merely claiming nonfunctional descriptive material stored in a computer-readable medium does not make the invention eligible for patenting. For example, a claim directed to a word processing file stored on a disk may satisfy the utility requirement of 35 U.S.C. 101 since the information stored may have some "real world" value. However, the mere fact that the claim may satisfy the utility requirement of 35 U.S.C. 101 does not mean that a useful result is achieved under the practical application requirement. The claimed invention as a whole must produce a "useful, concrete and tangible" result to have a practical application.

5.2. As set forth in MPEP 2106 (IV) (B) (1):

Claims to computer-related inventions that are clearly nonstatutory fall into the same general categories as nonstatutory claims in other arts, namely natural phenomena such as magnetism, and abstract ideas or laws of nature which constitute "descriptive material." Abstract ideas, Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759, or the mere manipulation of abstract ideas, Schrader, 22 F.3d at 292-93, 30 USPQ2d at 1457-58, are not patentable. Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data. Both types of "descriptive material" are nonstatutory when claimed as descriptive material per se. Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

5.3. As set forth in MPEP 2106 (IV)(B)(1)(a):

Similarly, computer programs claimed as computer listings *per se, i.e.,* the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. Accordingly, it is important to distinguish claims that define descriptive material *per se from claims* that define statutory inventions.

Products may be either machines, manufactures, or compositions of matter. *A machine is* "a concrete thing, consisting of parts or of certain devices and combinations of devices." *Burr v. Duryee. 68* U.S. (1 Wall.) *531, 570 (1863).* If a claim defines a useful machine or manufacture by identifying the physical structure of the machine or manufacture in terms of its hardware or hardware and software combination, it defines a statutory product. See, e.g., *Lowry, 32 F.3d* at *1583, 32* USPQ2d at *1034-35; Warmerdarn,* 33 F.3d at 1361-62, 31 USPQ2d at 1760.

Office personnel must treat each claim as a whole. The mere fact that a hardware element is recited in a claim does not necessarily limit the claim to a specific machine or manufacture. Cf. *In re Iwahashi, 888* F.2d 1370, 1374-75, 12 USPQ2d 1908, *191 1*-12 (Fed. Cir. 1989), cited with approval in *Alappat,* 33 F.3d at 1544 n.24, 31 USPQ2d at 1558 n_24.

5.4. Claims 21-29 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

As per claim 21, the claim represents a system comprising parser, context generation and comparator components. Noted the components are components of a stopword detection component that is defined by software instructions (See specification [0031]). Although the component(s) "may be read into" memory or computer readable medium, however, the component and the components, defined by software instructions, do not fall into any one of the statutory categories of "process, machine, manufacture, or composition of matter, or any new and useful improvement thereof" under 35 U.S.C. § 101. The consequence is non-statutory.

As per claim 27, the claim represents a device comprising "means" for identifying potential stopwords, generating context data and rewriting query. Interpreting the claim language, in light of specification, the functionality of identifying, generating and rewriting is performed by components defined by software instructions (See specification [0031]) and not by any hardware means. Therefore, the device comprising of means for as described does not fall into any one of the statutory categories of "process, machine, manufacture, or composition of matter, or any new and useful improvement thereof" under 35 U.S.C. § 101. The same consequence is non-statutory.

As per claims 22-26 and 28-29, the claims directly or indirectly inherit the deficiency of being non-statutory from claims 21 and 27, respectively, and do not remedy the deficiency individually or by inheritance. Again, the consequence is non-statutory.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6.1. Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. ("Predicate Rewriting for Translating Boolean Queries in a Heterogeneous Information System, ACM Transactions on Information Systems, Vol. 17, No. 1, January 1999, hereafter "Chang") in view of McGreevy (U.S. Patent Application 2003/0004914).

As per claim 1, McGreevy teaches "A method of detecting stopwords in a query" (See Page 12, lines 24-32 where many system define stopwords in a query) comprising:

"identifying a potential stopword in the query" (See Page 3, lines 30-33 and Page 12, lines 24-26 where stopwords are identified and systems defined a set of stopwords).

Concerning identifying "based on a comparison to a list of stopwords", it is noted that Chang does not explicitly teach that the identifying is based on a comparison, although Chang explicitly teaches a list of stopwords defined in the system.

However, McGreevy teaches comparing query relations to detect stopterms at Figs. 12-13 and Page 17, [0194]-[0198] after query fields parsed and query relations in term pairs created.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine the teaching of McGreevy with Chang reference because both references are directed to identifying search terms in queries where Chang allows users to compose Boolean queries in a rich front-end language for filtering an effective set of query results while McGreevy searches phrases in database by using query models to cure the problem of creating unrecognizable query after stopwords are simply removed, the combined teaching would have created an effective query search system that any removal of terms from a query would not have been overlooked and query results would have been effectively filtered.

The combined teaching of the McGreevy with Chang references further teaches the following:

"generating a plurality of sets of context data based on the query and the potential stopword" (See Chang: Page 2, lines 18-25 where front-end processes user queries and returns preliminary results);

"comparing the sets of context data" (See Chang: Page 2, lines 25-31 where front-end further generates filter queries to process the preliminary results and produce final answers); and

"classifying the potential stopword either as an actual stopword or as being material to the query based on the comparing" (See McGreevy: Pages 17-18, [0198] and [0202]

where relevance of query relation to stopterms is weighted for eliminating the relations in a query model and the identified relation is the actual relation removed, and Chang: Page 32 where subsuming query with stopwords removed closely approximates the original query).

As per claims 11, 27 and 30, Chang teaches "identifying ... stopwords in a query"," wherein the ... stopwords include at least one actual stopword" (See Page 3, lines 30-33 and Page 12, lines 24-26 where stopwords are identified and systems defined a set of stopwords and the stopwords identified are actual stopwords).

It is noted that Chang does not explicitly teach that the stopwords are identified among potential stopwords.

However, McGreevy teaches comparing query relations to detect stopterms where query relations are among the potential stopterms at Figs. 12-13 and Page 17, [0194]-[0198], after query fields parsed and query relations in term pairs created.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine the teaching of McGreevy with Chang reference because both references are directed to identifying search terms in queries where Chang allows users to compose Boolean queries in a rich front-end language for filtering an effective set of query results while McGreevy searches phrases in database by using query models to cure the problem of creating unrecognizable query after stopwords are simply removed, the combined teaching would have created an effective

query search system that any removal of terms from a query would not have been overlooked and query results would have been effectively filtered.

The combined teaching of the McGreevy with Chang references further teaches the following:

"generating context data based on the query and the potential stopwords" (See Chang: Page 2, lines 18-25 where front-end processes user queries and returns preliminary results); and

"classifying those of the potential stopwords that do not meaningfully contribute to the retrieving of the context data as actual stopwords and others of the potential stopwords that meaningfully contribute to the retrieving of the context data as being material to the query" (See McGreevy: Pages 17-18, [0198] and [0202] where relevance of query relation to stopterms is weighted for eliminating the relations in a query model and the identified relation is the actual relation removed, and Chang: Page 32 where subsuming query with stopwords removed closely approximates the original query); and

"rewriting the query to remove one or more of the, at least one, actual stopwords from the query" (See Chang: Page 32, Paragraph 6.2: Summary of Other Experiments, beginning 9 lines where stopwords are removed for rewriting query rule).

As per claim 21, Chang teaches "a parser component configured to receive a search query and identify ... stopwords in the search query" (See Fig. 1 where user's query input is received by a parser, and Page 3, lines 30-33 and Page 12, lines 24-26 where

stopwords are identified and systems defined a set of stopwords and the stopwords identified are actual stopwords).

It is noted that Chang does not explicitly teach that the stopwords are identified among potential stopwords.

However, McGreevy teaches comparing query relations to detect stopterms where query relations are among the potential stopterms at Figs. 12-13 and Page 17, [0194]-[0198], after query fields parsed and query relations in term pairs created.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine the teaching of McGreevy with Chang reference because both references are directed to identifying search terms in queries where Chang allows users to compose Boolean queries in a rich front-end language for filtering an effective set of query results while McGreevy searches phrases in database by using query models to cure the problem of creating unrecognizable query after stopwords are simply removed, the combined teaching would have created an effective query search system that any removal of terms from a query would not have been overlooked and query results would have been effectively filtered.

The combined teaching of the McGreevy with Chang references further teaches the following:

"a context generation component to generate context data based on the search query and the potential stopwords" (See Chang: Page 2, lines 18-25 where front-end processes user queries and returns preliminary results); and

"a comparator component to compare the context data to determine those of the potential stopwords that effected generation of the context data that is not substantially similar to context data unassociated with those potential stopwords" (See McGreevy: Pages 17-18, [0198] and [0202] where relevance of query relation to stopterms is weighted for eliminating the relations in a query model and the identified relation is the actual relation removed, and Chang: Page 32 where subsuming query with stopwords removed closely approximates the original query).

As per claim 2, McGreevy teaches "The method **of** claim 1, further comprising: rewriting the query to remove the actual stopword from the query" (See Pages 17-18, [0198] and [0202] where relevance of query relation to stopterms is weighted for eliminating the relations in a query model).

As per claim 3, McGreevy teaches "The method of claim 1, wherein the potential stopword includes a plurality of stopwords and each of the plurality of sets of context data corresponds to a combination of the potential stopwords" (See Pages 17-18, [0198] and [0202] where relevance of query relation to stopterms is weighted for eliminating the relations in a query model, and relations created from a first and a second query terms are eliminated from query model if the relations fall in the collections of stop relations).

As per claim 4, McGreevy teaches "The method of claim 1, wherein comparing the sets of context data includes comparing the sets of context data to one another to determine whether various ones of the plurality of sets of context data are substantially similar" (See Pages 17-18, [0198] and [0202] where relevance of query relation to stopterms is weighted for eliminating the relations in a query model).

As per claim 5, McGreevy teaches the method of claim 1, wherein generating the plurality of sets of context data includes:
"generating a first set of context data from the query" (See Pages 17-18, [0194], [0198] and [0202] where query includes a number of query fields in a query model is generated and parsed); and
generating a second set of context data from a version of the query in which the potential stopword is removed" (See Pages 17-18, [0198] and [0202] where relevance of query relation to stopterms is weighted for eliminating the relations in a query model).

As per claim 6, McGreevy teaches the method of claim 1, wherein generating the plurality of sets of context data includes:
"deriving a plurality of second queries from the query and the potential stopword" (See Pages 17-18, [0198] and [0202] where relevance of query relation to stopterms is weighted for eliminating the relations in a query model); and
"querying a database using the plurality of second queries" (See Pages 17-18, [0198] and [0202] where a query model is modified as a function of stopterms in the query).

As per claim 7, McGreevy teaches "The method of claim 6, wherein querying the database includes issuing the plurality of second queries to a search engine, and wherein the potential stopword includes a plurality of potential stopwords and the plurality of second queries are derived from combinations of the potential stopwords plus terms in the query that are not potential stopwords" (See Page 16, [0186] where keyterm and its context relevance are used to query a database, at Page 17, [0196] where stopterms are added to or removed from a list, and at Pages 17-18, [0198] and [0202] where relevance of query relation to stopterms is weighted for eliminating the relations in a query model).

As per claim 8, McGreevy teaches the method of claim 1, wherein generating the plurality of sets of context data includes:

"deriving a plurality of second queries from the query and the potential stopword" (See Fig. 13 and Page 17-18, [0194]-[0198] where a query model is detected for its relations containing stopterms in phrase search and the query model is modified and stop relation is blocked based on a collection of the related concepts described by the stop relation); and

"locating categories relevant to the second queries using a category generator" (See Pages 17-18, [0198] and [0202] where relations are created from a first and a second query terms which are eliminated from query model if the relations fall in the collections of stop relations).

As per claim 9, McGreevy teaches "The method of claim 8, wherein the potential stopword includes a plurality of potential stopwords and plurality of second queries are derived from combinations of the potential stopwords plus terms in the query that are not potential stopwords" (See Fig. 13 and Page 17-18, [0194]-[0198] where a query model is detected for its relations containing stopterms in phrase search and the query model is modified and stop relation is blocked based on a collection of the related concepts described by the stop relation).

As per claim 10, McGreevy teaches "The method of claim 1, wherein the potential stopword includes a stop-phrase" (See Pages 17-18, [0198] and [0202] where relevance of query relation to stopterms is weighted for eliminating the relations in a query model, and relations created from a first and a second query terms are eliminated from query model if the relations fall in the collections of stop relations).

As per claim 12, McGreevy teaches "The method of claim 11, wherein generating the context data includes: retrieving a plurality of sets of context data in which each said set corresponds to a different combination of the potential stopwords" (See Fig. 13 and Page 17-18, [0194]-[0198] where a query model is detected for its relations containing stopterms in phrase search and the query model is modified and stop relation is blocked based on a collection of the related concepts described by the stop relation).

14. The method of claim 11, wherein generating the context data includes: As per claim 13, McGreevy teaches "The method of claim 12, further comprising wherein the designating the actual stopwords includes:

comparing the plurality of sets of context data to one another to determine whether various ones of the plurality of sets of context data are substantially similar,

wherein rewriting the query to remove the one or more actual stopwords is based on the comparison of the plurality of sets of context data" (See Pages 17-18, [0198] and [0202] where relevance of query relation to stopterms is weighted for eliminating the relations in a query model).

As per claim 14, McGreevy teaches the method of claim 11, wherein generating the context data includes:

"generating a first set of context data as context data derived from the query" (See Pages 17-18, [0194], [0198] and [0202] where query includes a number of query fields in a query model is generated and parsed); and

"generating a second set of context data as context data derived from a version of the query in which one or more potential stopwords are removed" (See Pages 17-18, [0198] and [0202] where relevance of query relation to stopterms is weighted for eliminating the relations in a query model).

As per claim 15, McGreevy teaches the method of claim 11, wherein generating the context data includes:

"deriving a plurality of second queries from the query and the potential stopwords" (See Pages 17-18, [0198] and [0202] where relevance of query relation to stopterms is weighted for eliminating the relations in a query model); and

"querying a database using the plurality of second queries" (See Pages 17-18, [0198] and [0202] where a query model is modified as a function of stopterms in the query).

As per claim 16, McGreevy teaches the method of claim 15, wherein the plurality of second queries are derived from combinations of the potential stopwords plus terms in the query that are not potential stopwords" (See Page 16, [0186] where keyterm and its context relevance are used to query a database, at Page 17, [0196] where stopterms are added to or removed from a list, and at Pages 17-18, [0198] and [0202] where relevance of query relation to stopterms is weighted for eliminating the relations in a query model).

As per claim 17, McGreevy teaches the method of claim 11, wherein generating the context data includes:

"deriving a plurality of second queries from the query and the potential stopwords" (See Fig. 13 and Page 17-18, [0194]-[0198] where a query model is detected for its relations containing stopterms in phrase search and the query model is modified and

stop relation is blocked based on a collection of the related concepts described by the stop relation); and

"issuing the plurality of second queries to a category generator to locate categories relevant to the second queries" (See Pages 17-18, [0198] and [0202] where relations are created from a first and a second query terms which are eliminated from query model if the relations fall in the collections of stop relations).

As per claim 18, McGreevy teaches the method of claim 17, wherein "the plurality of second queries are derived from combinations of the potential stopwords plus terms in the query that are not potential stopwords" (See Fig. 13 and Page 17-18, [0194]-[0198] where a query model is detected for its relations containing stopterms in phrase search and the query model is modified and stop relation is blocked based on a collection of the related concepts described by the stop relation).

As per claim 19, McGreevy teaches the method of claim 11, wherein "identifying the potential stopwords includes: matching terms in the query to a pre-defined list of stopwords" (See Fig. 13 and Page 17-18, [0194]-[0198] where a query model is detected for its relations containing stopterms in phrase search and the query model is modified and stop relation is blocked based on a collection of the related concepts described by the stop relation).

As per claim 20, McGreevy teaches the method of claim 11, wherein the "potential stopwords include potential stopwords and stop-phrases" (See Fig. 13 and Page 17-18, [0194]-[0198] where a query model is detected for its relations containing stopterms in phrase search and the query model is modified and stop relation is blocked based on a collection of the related concepts described by the stop relation).

As per claim 22, McGreevy further "The system of claim 21, wherein, when the comparator determines that one or more of the potential stopwords do not effect generation of the context data that is not substantially similar to context data unassociated with the one or more potential stopwords, the search query is rewritten to a form that does not include the one or more potential stopwords" (See McGreevy: Pages 17-18, [0198] and [0202] where relevance of query relation to stopterms is weighted for eliminating the relations in a query model, and relations created from a first and a second query terms are eliminated from query model if the relations fall in the collections of stop relations).

As per claim 23, McGreevy further teaches the system of claim 21, wherein "the context generation component includes a search engine" (See McGreevy: Fig. 23 and Page 38, [0388] where embodiment of system for phrase search includes a processor).

As per claim 24, McGreevy further teaches the system of claim 23, wherein "The system of claim 23, wherein the comparator component compares sets of documents

returned from the search engine to determine those of the potential stopwords that effect generation of the context data that is not substantially similar to context data unassociated with those potential stopwords" (See McGreevy: Pages 17-18, [0198] and [0202] where query terms pair is created from selected query model and compared to the relations in query model for determining the relation pair is blocked, reversed or other processing).

As per claim 25, McGreevy further teaches the system of claim 21, wherein "the context generation component includes a category generator configured to locate category lists relevant to a search query" (See McGreevy: Pages 17-18, [0198] and [0202] where relations are created from a first and a second query terms which are eliminated from query model if the relations fall in the collections of stop relations).

As per claim 26, McGreevy further teaches "The system of claim 25, wherein the comparator component compares category lists to one another to determine those of the potential stopwords that effect
generation of the context data that is not substantially similar to context data unassociated with those potential stopwords" (See McGreevy: Pages 17-18, [0198] and [0202] where relevance of query relation to stopterms is weighted for eliminating the relations in a query model).

As per claim 28, McGreevy teaches the device of claim 27, further comprising:

"means for searching a document index to locate a set of documents and return the set of documents to the means for generating context data" (See Page 16, [0186 where documents are searched, retrieved and sorted on their relevance to the keyterm in context).

As per claim 29, McGreevy teaches the device of claim 27, further comprising: "means for locating a list of categories relevant to an input category query and returning the list of categories to the means for generating context data" (See Page 29, [0326] where phrase extraction from query can include sets of special terms to determine the extent of term allowed to appear in a particular position within a phrase).

6.2. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wan (U.S. Patent Application 2003/0233618) in view of McGreevy (U.S. Patent Application 2003/0004914), and further in view of Chang et al. ("Predicate Rewriting for Translating Boolean Queries in a Heterogeneous Information System, ACM Transactions on Information Systems, Vol. 17, No. 1, January 1999, hereafter "Chang").

As per claim 31, Wan teaches "A document retrieval system" (See Page 1, [0001] where structured-documents are indexes and queried) comprising:
"a search engine" (See Fig. 2 and Page 3, [0033] where an extended processor is the search engine) configured to:

"receive a user search query" (See Page 2, [0033] where a query is received by query preprocessor in the extended processor); and

"receive rewritten versions of the search query" (See Page 2, [0033] where the high level query is modified to generated a reformulated query for query processor to parse and analyze).

Wan does not explicitly teach the query is revised to "exclude stopwords not material to an intended result of the search query", although Wan teaches reformulating user query by substituting non-indexing components with corresponding components at Fig. 5 and Page 4, [0043].

However, McGreevy teaches weighting relevance less or eliminating the relations in a query model that containing stopterms at Pages 17-18, [0198] and [0202].

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine the teaching of McGreevy with Wan references because both references are directed to query searching relational databases and re-writing queries where Wan concerns building indices on XML elements and attributes for fast searching in which large indices making database update very inefficient while McGreevy reference teaches phrase search by creating and comparing relational models, and the combined teaching of the references would have improved performance of fast searching of XML database and efficiency of updating a database of structured documents with very large indices of Wan's system because subset database search or update could have been performed (See BACKGROUND or BACKGROUND OF THE INVENTION of the references).

It is noted that McGreevy does not explicitly teach "stopwords", although McGreevy teaches stopterms as previously described.

However, Chang teaches identifying a stopword in a query at Page 3, lines 30-33 and Page 12, lines 24-26.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine the teaching of Chang with McGreevy and Wan references because the references are directed to identifying search terms in queries where Chang allows users to compose Boolean queries in a rich front-end language for filtering an effective set of query results while McGreevy searches phrases in database by using query models to cure the problem of creating unrecognizable query after stopwords are simply removed, the combined teaching would have created an effective query search system that any removal of terms from a query would not have been overlooked and query results would have been effectively filtered.

The combined teaching of the Chang, McGreevy and Wan references further teaches the following:

"perform a search of a document index based on the rewritten versions of the search query" (See Wan: Page 1, [0006] where a reformulated query is executed with references to indexing components in which the indices of the indexed components are utilized in the query for providing query results); and

"a stopword detection component to rewrite the search query" (See McGreevy: Fig. 13 and Page 17, [0194]-[0198] where a query model is detected for its relations containing stopterms in phrase search and the query model is modified, Chang: Page 3, lines 30-

33 and Page 12, lines 24-26 where stopwords are identified), the stopword detection component including:

"a parser component configured to receive the user search query and identify potential stopwords in the search query" (See McGreevy: Figs. 12-13 and Page 17, [0194]-[0198] where query is parsed for its fields to create query relation in term pair for comparing with query relations in query model for detecting query relations having stopterms);

"a context generation component to generate context data based on the search query and the potential stopwords" (See Chang: Page 2, lines 18-25 where front-end processes user queries and returns preliminary results); and

"a comparator component to compare the context data to determine those of the potential stopwords that affect the context data" (See McGreevy: Pages 17-18, [0198] and [0202] where relevance of query relation to stopterms is weighted for eliminating the relations in a query model and the identified relation is the actual relation removed, and Chang: Page 32 where subsuming query with stopwords removed closely approximates the original query).

7. The prior art made of record

U. Chang et al.: "Predicate Rewriting for Translating Boolean Queries in a Heterogeneous Information System, ACM Transactions on Information Systems, Vol. 17, No. 1, January 1999

A. U.S. Patent Application 2003/0004914

B. U.S. Patent Application 2003/0233618

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

C. U.S. Patent No. 6,477,524

D. U.S. Patent No. 6,360,215

E. U.S. Patent Application 2004/0088308

F. U.S. Patent Application 2003/0088562

G. U.S. Patent Application 2003/0069877

H. U.S. Patent Application 2004/0215608

I. U.S. Patent Application 2004/0068697

Conclusion

8. Applicant's amendment necessitated the new grounds of rejection presented in this Office Action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1 .136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuen S. Lu whose telephone number is (571) 272-4114. The examiner can normally be reached on Monday-Friday (8:00 am-5:00 pm). If attempts to reach the examiner by telephone pre unsuccessful, the examiner's Supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 703-305-39000.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for Page 13 published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 703-305-3900 (toll-free).

Kuen S. Lu

Patent Examiner, Art Unit 2167

February 26, 2007

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